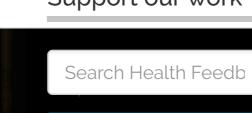
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Flora Teoh Science Editor, Health Feedback



## Analysis of alleged Medicare data by Steve Kirsch is flawed and doesn't show COVID-19 vaccines increase mortality rate

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VERDICT ? CLAIM "Medicare data shows the **UNSUPPORTED** COVID vaccines increase your risk of dying" **≡**substack SOURCE: Steve Kirsch, Substack, 26 Feb. 2023 **DETAILS** Misrepresents a complex reality: The rise in deaths that appears in the graph showing the number of days elapsed before a person who received one dose of COVID-19 vaccine died can be explained by the healthy vaccinee effect, seasonality, and COVID-19. No reliable evidence is provided to establish that the rise is due to COVID-19 vaccination.

Kirsch's claim that COVID-19 vaccines increase a person's risk of death is based on a flawed data analysis. The data used is of questionable provenance and carries significant limitations, such as uncertainty over how the analyzed dataset was selected and incomplete information on vaccination status. Published studies

KEY TAKE AWAY

using more reliable sources of data that don't carry the same limitations didn't find that COVID-19 vaccination increases mortality rate.

FULL CLAIM: "Medicare data shows the COVID vaccines increase your risk of dying"; "It shows that these shots increase your risk of dying and once you get shot, your risk of dying remains elevated for an unknown amount of time. And that's in the very population it is supposed to help the most!"; "If nobody can explain how the 'slope goes the wrong way," then this should be GAME OVER for the vaccination program"

On 26 February 2023, entrepreneur Steve Kirsch published a Substack post with the headline "Medicare data shows the COVID vaccines increase your risk of dying". Medicare is federal health insurance for people aged 65 and older in the U.S. According to Kirsch, this data was "hidden", but had been mailed to him in a USB drive by an anonymous "whistleblower". The post received more than 5,700 user engagements on Facebook, according to the social media analytics tool CrowdTangle. Kirsch's tweet of the post drew more than 2,000

## retweets. In the post, he used this data to compare the trends in mortality of people who received the COVID-19 vaccine with that of weekly mortality trends in 2021 of both vaccinated and unvaccinated people.

100K

Jan 2021

02/22/2021

02/24/2021

02/25/2021

02/27/2021

02/28/2021 03/02/2021 03/03/2021 03/05/2021

03/06/2021

400

200

0

Date

Jul 2021

0.0%

0.0%

<2 yrs 2-4 yrs 5-11 yrs 12-17 yrs 18-24 yrs 25-49 yrs 50-64 yrs 65+ yrs

6.0%

7.0%

0.3%

0.4%

200

100

establishes itself again over time.

in the U.S. (Figure 4).

Cases

Age - All Groups Age by Race/Ethnicit

Pediatric Case Proportio

Race/Ethnicity

Race/Ethnicity by Age

Deaths

Age by Race/Ethnicity

Race/Ethnicity

Race/Ethnicity by Age

retrieved on 7 March 2023.

20

Apr 2021

disproportionately higher COVID-19 deaths in this age group.

earlier than in the graph of first-quarter first-dose recipients.

so this wouldn't plausibly function as a "control group".

The control group for 2021

40K

20K

Jul 2021

Oct 2021

US: Includes data up to the week ending on Mar 04, 2023. Percentage of deaths among reported cases - 0.98%. Percentage of deaths reporting age by date - 99.91%.

300

400

Figure 4. This shows days until death from Shot #1 where shot #1 was given in Q1 2021 to Medicare recipients under 80. Every single day is a dot on this graph. What is supposed to happen is the line is supposed to slope DOWNWARD due to seasonality. If nothing "bad" is going on, this should look like a weighted moving average of Figure 2 (using the weights in Figure 3). As you can see, the slope goes

500

600

700

800

900

REVIEW

observed that rather than showing the typical peak-trough-peak pattern that is the result of seasonal fluctuations in deaths, there was instead a spike in deaths, slightly after 300 days of receiving the first dose of COVID-19 vaccine. Kirsch interpreted this as evidence that the COVID-19 vaccines are harmful. But this is a premature conclusion that isn't supported by the analysis, as we will see below. It's also not the first time Kirsch has made inaccurate or unsubstantiated claims about COVID-19 vaccine safety. Furthermore, the authenticity of the data is in question. While Kirsch asserted that the data were authentic, as it matched with records he already had, we don't have a way to independently verify this claim, since the

He stated that if COVID-19 vaccines weren't harming people, then the trends should look the same. But he

following vaccination and that it is "a random subset". Whether it is actually a randomized selection of Medicare data is, again, unknown. Health Feedback reached out to the Centers for Medicare & Medicaid Services (CMS) for comment. In an email, a spokesperson stated that "CMS does not have data that would support the claims of this blog post". Overall, readers are advised to interpret Kirsch's analysis with due caution. Potential causes of death like COVID-19 aren't fully accounted for in Kirsch's analysis Kirsch's comparison of mortality trends is based on our knowledge of seasonal fluctuations in deaths<sup>[1,2]</sup>.

Deaths tend to peak in winter months, then fall towards summer. This pattern tends to be more pronounced

in older populations, which is relevant to Kirsch's dataset as it includes those aged 65 and above. If we were

to plot all-cause mortality in this age group on an annual basis, we would expect to see a graph with a peak-

trough-peak pattern in one year, shown below in Figure 1.

All deaths in those aged 65 to 84, 2015 to 2019

data isn't public. On top of this, Kirsch stated in the spreadsheet of his data that it doesn't capture all deaths

Number of deaths

Week

Figure 1. Sum of all deaths in those aged 65 to 84 from 2015 to 2019. Source: U.S. National Center for Health

Statistics (Weekly Counts of Deaths by Jurisdiction and Age). Data retrieved on 6 March 2023.

Jan 2022

15.3%

20.7%

11.2%

12.4%

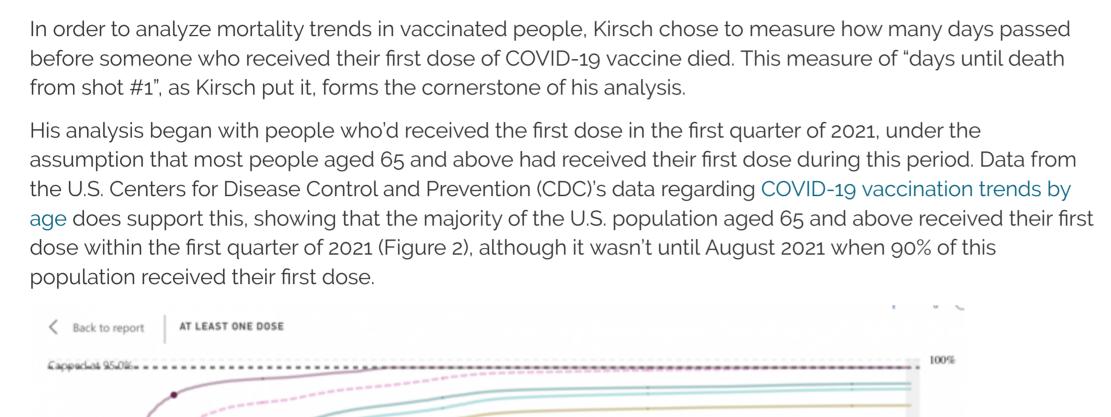
14.4%

47.3%

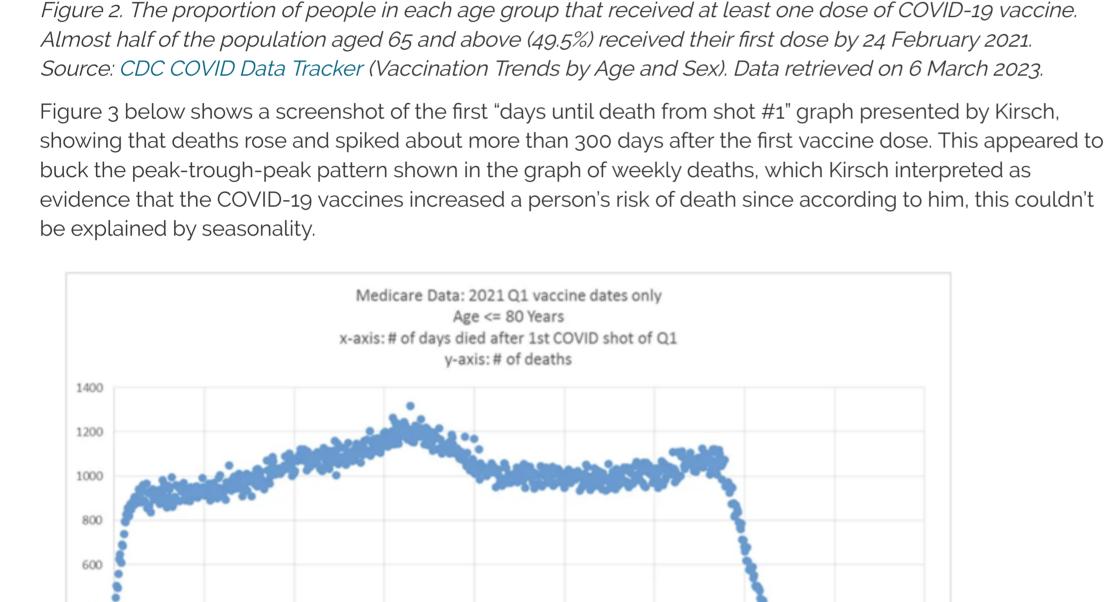
49.5%

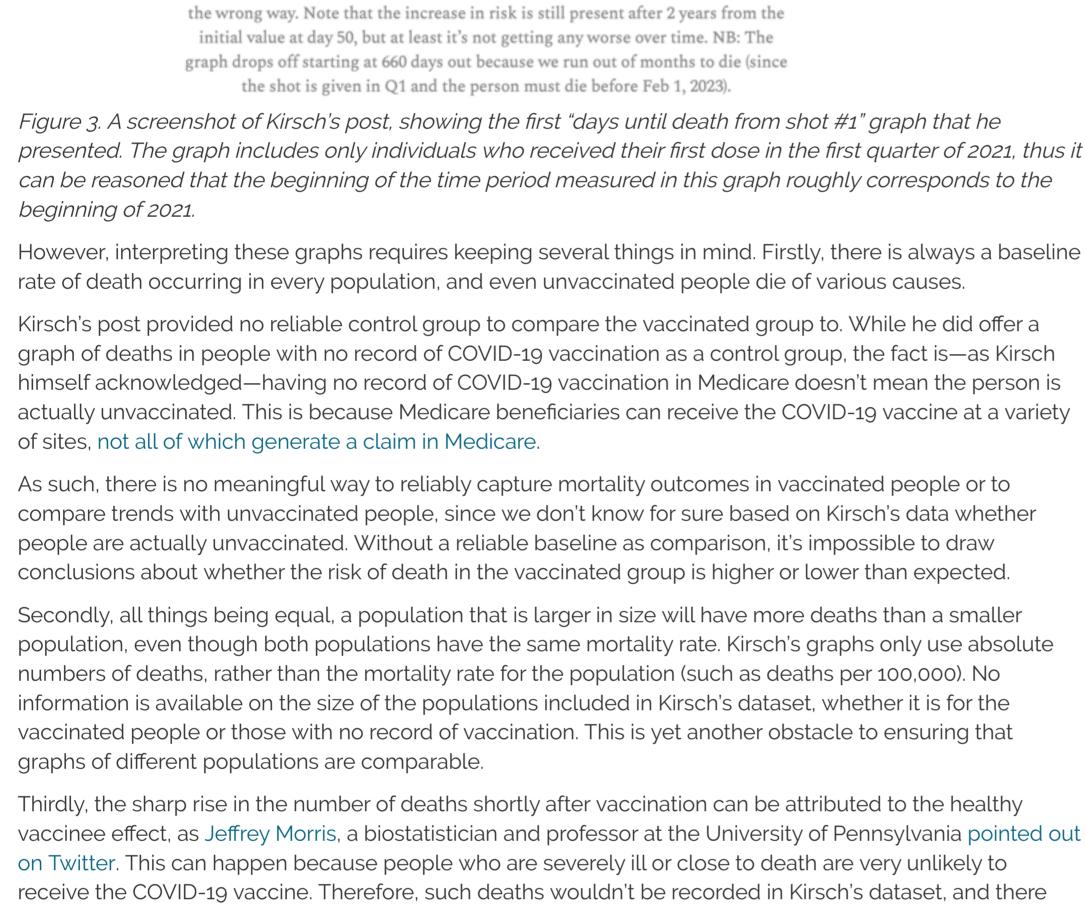
53.7%

61.0%



Jul 2022







Jan 2022

Figure 4. Weekly COVID-19 deaths per 100,000 people, by age group. Source: CDC COVID Data Tracker. Data

In addition, most Medicare beneficiaries are aged 65 and above. As the breakdown of COVID-19 deaths by

Kirsch's graph of "days until death" in people who received the first dose in the second quarter of 2021 (as

opposed to the first quarter) only further supports both the above explanations—we see that the spike in

period measured in the graph starts later, both seasonal deaths and COVID-19 deaths would make their

deaths is brought forward in time, before 300 days (compare Figure 5 below with Figure 3). Because the time

age group shows, the largest proportion of COVID-19 deaths during this time can be traced to this age

group. Therefore, the spike in deaths that Kirsch observed is likely the result, at least in part, of

US territories are included in case and death counts but not in population counts. Potential six-week delay in case reporting to CDC denoted by gray bars. Weekly data with five or fewer deaths have been supp

\*Case Earliest Date is the earliest of the clinical date (related to illness or specimen collection and chosen by a defined hierarchy) and the Date Received by CDC. The date for the current week extends through

Case Earliest Date by End of Week\*

Jul 2022

Oct 2022

--- 16 - 17

--- 18 - 29 ..... 30 - 39

— 40 - 49

.... 50 - 64

--- 65 - 74

--75+

are very few deaths recorded in the early days post-vaccination (see Figure 3) until a baseline mortality rate

Fourthly, the peak in deaths takes place roughly past 300 days following the first dose. This would actually

And as Kirsch's own graphs on weekly deaths illustrated, the period around December 2021 and January

place that peak sometime around December 2021 and January 2022, since the majority of Medicare

2022 corresponds to the yearly peak that occurs due to seasonal fluctuations. Therefore, the pattern

comparing the "days until death from shot #1" graphs to that of weekly deaths like in Figure 1 is that the

Health Feedback also reached out to epidemiologist Katelyn Jetelina, who questioned whether Kirsch had

accounted for different waves of COVID-19 in 2021. The Centers for Medicare & Medicaid Services doesn't

collect data on cause of death, but the CDC's epidemiological data for the whole of the U.S., shown in the

COVID Data Tracker, shows that the same period also corresponds to a wave of COVID-19 cases and deaths

observed by Kirsch can simply be explained by seasonality. In other words, the problem here with

dimension of time is being measured differently: one measures time in days, the other in weeks.

beneficiaries received at least one dose of COVID-19 vaccine in the first quarter of 2021.

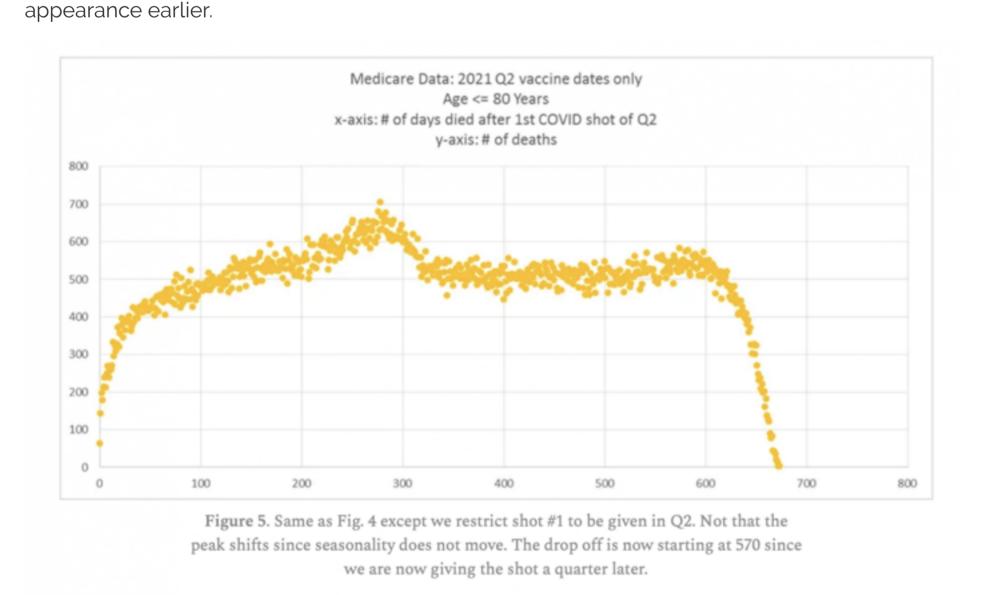


Figure 5. Screenshot of Kirsch's graph depicting the number of days elapsed before a person who had

received the first dose of COVID-19 vaccine in the second quarter died. Note that the peak in deaths occurs

Curiously, Kirsch also plotted a graph of weekly deaths in people aged 65 and above in 2021, which he used

COVID-19 vaccines are increasing mortality rates, since the majority of people in this age group received the

first dose of vaccine very early on in the year, which the post itself acknowledged. If his claim were true, we

would expect the increased mortality rate to have made itself apparent in 2021, bucking the expected trend,

to represent what would happen if the vaccine was safe (Figure 6). This is inconsistent with his claim that

drop for the first 11 weeks and stabilize. In 2021, there is a steeper drop than normal because of COVID adding to the drop:

Figure 2. This is the weekly death counts summed over all US states for 2021. This is essentially the control graph. This was created using a visualization on the CDC website using this dataset. Epidemiologists are very familiar with this effect. There are no surprises here. The deaths drop for the first 11 weeks of the year then stabilize. The peak is 81K, the trough is 50K so there is a 39% combined drop from

Figure 2 shows the deaths by week in 2021 for all states ages 65-84. Note that the rates

peak to trough. Figure 6. Screenshot of Kirsch's post, showing a graph of all weekly deaths in the U.S. for the population aged 65 to 84 in 2021, which Kirsch considered the "control group" that represents what happens with a "safe vaccine". Health Feedback reached out to Kirsch for comment, but didn't receive a response by the time of publication. Published studies show that COVID-19 vaccines don't increase a person's risk of death Studies haven't found that vaccinated people are more likely to die compared to unvaccinated people. One such example is a CDC study examining the period between December 2020 and July 2021<sup>[3]</sup>, which found that COVID-19 vaccine recipients had lower rates of non-COVID-19 mortality. Another study, published in the journal JAMA Network, looked at excess mortality in the U.S. and other peer countries between June 2021 and March 2022. It reported that excess all-cause mortality was greater in the

Another study in the state of Indiana, which included more than 520,000 people, compared vaccinated

people with unvaccinated, previously infected people. The study found that all-cause mortality was 37%

Kirsch's claim that COVID-19 vaccines increase a person's risk of death is based on an unreliable data

over how the dataset was selected and incomplete information on vaccination status. The analysis also

doesn't contain sufficient information to determine and compare mortality rates, as population sizes are

unknown. The rise in deaths recorded in Kirsch's graphs can be explained by the healthy vaccinee effect,

analysis. The data used is of questionable provenance and carries significant limitations, such as uncertainty

ten least-vaccinated states than in the ten most-vaccinated states<sup>[4]</sup>.

mortality in the USA from 1980 to 2016. eLife.

European Journal of Public Health.

science and to help readers know which news to trust.

Weekly Report.

lower in the vaccinated group<sup>[5]</sup>.

Conclusion

seasonality, and COVID-19. Published studies using more reliable sources of data and methods didn't find that COVID-19 vaccination increases mortality rate. **REFERENCES** • 1 – Parks et al. (2018) National and regional seasonal dynamics of all-cause and cause-specific

• 2 – Fowler et al. (2014) Excess Winter Deaths in Europe: a multi-country descriptive analysis.

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